

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of the claims in the application:

**Listing of Claims:**

1 –18 (Cancelled)

19. (Currently Amended) A process gas diffuser, comprising:

a first diffusion stage including a plurality of independent radial ~~channels~~ gas zones of differing diameters positioned in spaced concentric fashion and associated with corresponding gas supply passages passing through a lid of the first diffusion stage, each radial channel having a unique gas supply passage and corresponding gas zone within a reactor chamber;

a second diffusion stage configured to diffuse process gas through a plurality of diffusion holes and having a plurality of gas zones arranged in a radial geometry into each gas zone of the reactor chamber; and

a gas ~~diffusion stage~~ transition baffle plate located between the first diffusion stage and the second diffusion stage, ~~the gas diffusion stage configured to include~~ and having a plurality of gas transition passages ~~therein, each gas transition passage~~ in fluid communication with a corresponding radial channel gas zone of the plurality of radial channels of the first diffusion stage and with the plurality of diffusion holes a corresponding one of the gas zones of the second diffusion stage.

20. (Currently Amended) The process gas diffuser of claim 19, wherein the quantity of gas transition passages per gas zone of the first diffusion stage varies between each ~~radial channel~~ gas zone.

21. (Currently Amended) The process gas diffuser of claim 19, wherein the quantity of diffusion holes varies for each gas zone of the second diffusion plate.

22. (Currently Amended) The process gas diffuser of claim 19, wherein the diameter of gas transition passages varies between each ~~radial channel~~ gas zone of the first diffusion stage.

23. (Currently Amended) The process gas diffuser of claim 22, wherein the diameter of each gas transition passage increases for each associated ~~radial channel~~ gas zone of the first diffusion stage located further from the center of the process gas diffuser.

24. (Currently Amended) The process gas diffuser of claim 19, further comprising a unique gas source for each unique gas supply passage configured to control gas flow rate for each of the plurality of ~~independent radial channels~~ gas zones of the first diffusion stage.

25. (Currently Amended) A method, ~~for process gas distribution in a reactor chamber through a diffuser,~~ the method comprising, supplying process gas to a first diffusion stage of a process gas distribution apparatus so as to provide said process gas to one or more of ~~including a plurality of radial channels gas zones of differing diameters positioned in spaced concentric fashion via associated, each radial channel having a unique gas supply passages passing through a lid of the first diffusion stage passage and~~ corresponding gas zone within the reactor chamber, flowing the process gas flowing from each unique gas supply passage to each corresponding one of the plurality of radial channels zone through ~~corresponding gas transition passages within to a gas diffusion stage comprised of at least one gas~~ transition passage baffle plate, the gas transition passages being in fluid communication with a ~~corresponding radial channel and with at least one diffusion hole in the lower~~ with the gas zones of the first diffusion stage; and flowing the process gas from the gas transition passages to corresponding gas zones of a second diffusion stage of the process gas distribution apparatus.

26. (Currently Amended) The method of claim 25, further comprising ~~controlling gas flow characteristics by~~ flowing the process gas through varying quantities of ~~the~~ gas transition passages for each ~~corresponding radial channel~~ gas zone of the first diffusion stage.

27. (Currently Amended) The method of claim 25, further comprising ~~controlling gas flow characteristics by~~ flowing the process gas through varying diameters of ~~the~~ gas transition passages for each corresponding ~~radial channel~~ gas zone of the first diffusion stage.

28. (Currently Amended) The method of claim 25, further comprising ~~controlling gas flow characteristics by~~ metering gas flow of the process gas to each unique one of the gas supply passage passages.